3) (1) 14 ÷ d   d = 422 % 5 + 3
                       = 2 + 3 = 5

5) 422 (84
    40
    22
    20
     2

=> 14 ÷ 5

(a) non restoring

Divisor in binary : 0101
Dividend in binary : 11011

n	A	Q	Action
	00000	1110	initial
4	00001	110	LShift
4	11100	110	A-M
4	11100	1100	Q0-0
4		100	LShift
3	11001	1000	A+M
3	11110	0000	Q0-0
3	11110	000	LShift
2	11101	0001	A+M
2	00010	0001	Q0-1
2	00010	001	
1	00100	001	LShift
1	11111	001	A-M
1	11111	0010	Q0-0

Final A+M

00100 0010

Reminder = 00100 → 4

Quotient = 0010 → 2

(b) restoring

Divisor → 5 → 0101

Dividend → 14 → 11011

n	A	Q	Action
4	00000	1100	initial
4	00001	100	LShift
4	11100	100	subtract
4	00011	100	set Q0 and restore A
3	00111	000	LShift
3	11110	000	subtract
3	00111	0000	set Q0 and restore A
2	01111	000	LShift
2	00010	0001	subtract
2	00010	001	set Q0
1	00100	001	LShift
1	11111	0010	subtract
1	01100		set Q0 and restore A

Remainder - 0100 → 4

quotient - 0010 → 2

(i) N1

S = 0

$E^1 = 10000101$

in decimal $= E^1 = 133$.

$= 133 - 127 = 6$

$\therefore 1.0101(00)^6$

10010100 = Binary of no 1

Decimal of NO 1 = 84

N2

S = 0

$E^1 = 10000010$

$E^1 = 130 \Rightarrow E = 130 - 127 = 3$

$= 1.0011(0)^3$

$= 1001$ = Binary of no

Decimal = 9.5

~~Decimal~~

84 + 9.5 = 93.5

Binary of 93.5 = 1011101.1

$\Rightarrow 1.011101(1)^6$

E = 6

$E^1 = 127 + 6 = 133$

$E^1 = 10000101$

M = 01110111000000 S = 0